USSR

UDC 621.438.621.43.056

DIDENKO, V. I., KHRISTICH, V. A., SHEVCHENKO, A. M.

"Stability and Completeness of Combustion in the Ring-Tube Chamber of an Aviation Jet Engine Burning Natural Gas"

Vestn. Kiev. Politekhn. In-ta. Ser. Teploenerg. [Herald of Kiev Polytechnical Institute, Heat Engineering Series], No 9, 1972, pp 57-59, (Translated from Referativnyy Zhurnal, Aviatsioynnye i Raketnye Dvigateli, No 8, 1972, Abstract No 8.34.16, from the Resume).

Translation: Results are presented from an experimental study of the stability and completeness of combustion in a ring-tube aviation gas turbine engine burning natural gas. With a certain plan for gas distribution and unchanged combustion chamber design, in chamber operating modes with $\alpha \approx 5$, the fuel combustion stability is rather high ($\alpha_{av} \approx 44$), completeness of combustion $\eta_z \approx 0.91$-0.92 (studies performed with cold air at near atmospheric pressure $t_b \approx 80$°C; $P_b \approx 1.5$ atm.). 3 Figures; 3 Biblio. Refs.

1/1

ENGINEERING
Aeronautical and Space

USSR

UDC 621.438.056(088.8)

SHEVCHENKO, A. M., YAZICK, A. V., DIDENKO, V. I., and PANURIN, V. M.

"The Effect of the Gas Distribution Arrangement on the Characteristics of the Gas Turbine Combustion Chamber"

Kiev, Vestn. Kiyev. Politekhn In-ta. Ser. Teploenerg. (Journal of the Kiev Polytechnical Institute. Series on Thermal Power) No. 8, 1971, pp 14-17 (from Referativnyy Zhurnal - Turbostroyeniye, No. 9, Sep 71, Abstract No. 9.49.117)

Translation: The effect of the gas delivery arrangement on the fundamental characteristics of the gas turbine combustion chamber of an aviation engine are considered. Characteristics covered include completeness of combustion, temperature field of the gas stream, temperature level of the hot pipe walls, ignition and stability of combustion. Tests were conducted with natural gas with four types of atomizers. The air speed at the chamber intake was approximately 120 meters per second, the temperature 80 degrees C. and the pressure approximately 1.3 bar. It is shown that in this chamber the tested arrangements of gas delivery primarily influence the completeness of combustion and the stability of the process. 3 illustrations, 2 tables, 3 bibliographic entries.

1/1

1/2 051 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--BURNER DESIGN AND ITS EFFECT ON THE FORMATION OF NITROGEN OXIDES IN
GAS TURBINE COMBUSTION CHAMBERS FIRED BY NATURAL GAS -U-
AUTHOR-(03)-TUMANOVSKIY, A.G., KHRISTICH, V.A., SHEVCHENKO, [illegible].M.

COUNTRY OF INFO--USSR

SOURCE--TEPLOENERGETIKA 1970, 17(5), 35-8

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PROPULSION AND FUELS

TOPIC TAGS--GAS TURBINE, COMBUSTION PRODUCT, NATURAL GAS, MASS TRANSFER,
MODEL, NITROGEN OXIDE, COMBUSTION CHAMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1909 STEP NO--UR/0096/70/017/005/0035/0038

CIRC ACCESSION NO--AP0132171
UNCLASSIFIED

2/2 051 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132171

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONCN. OF NO PLUS NO SUB2 INEFFLUENT GASES FROM THE COMBUSTION OF NATURAL GAS IN GAS TURBINE COMBUSTION CHAMBERS (ONE FOURTH SCALE MODELS) WAS STUDIED AS A FUNCTION OF BURNER DESIGN (PREMIXED, DIFFUSIONAL, STREAM STABILIZED) AND LOCATION, EXCESS PRIMARY AIR (ALPHA SUB1) AND TOTAL AIR USED, CHAMBER PRESSURE, AND FLAME FRONT CHARACTERISTICS. EFFECTS OF EACH OF THE VARIABLES ARE DISCUSSES. THE LOWEST NO PLUS NO PLUS NO SUB2 CONCNS. WERE OBTAINED WITH A DIFFUSIONAL BURNER IN THE EXCESS PRIMARY AIR REGION ALPHA SUB1 EQUALS 1.8-2.0. LARGE AMPLITUDE PRESSURE PULSATIONS (VIBRATIONAL COMBUSTION) IN THE COMBUSTION CHAMBER REDUCED THE NO PLUS NO SUB2 CONCN. IN THE EXHAUST GASES. THIS EFFECT IS RELATED TO IMPROVED MASS TRANSFER IN THE FLAME AND THE GENERAL LOWERING OF THE TEMP. LEVEL OF THE COMBUSTION VOL.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--MODIFICATION OF WORK WITH MICROMANIPULATOR -U-

AUTHOR--SHEVCHENKO, A.M.

S

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 166-167

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--YEAST, MICROBIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0952 STEP NO--UR/0220/70/039/001/0166/0167

CIRC ACCESSION NO--AP0109109

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0109109

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD FOR PREPARATION OF METALLIC NEEDLES FROM WIRE FOR RUPTURE OF YEAST ASCI WHEN WORKING IN MICROMANIPULATOR IS DESCRIBED.

UNCLASSIFIED

USSR UDC 615.384.015.2:615.362.018:547.756

CHERNOV, G. A., SHEVCHENKO, A. N., KHOMYAKOV, K. P., and VIRNIK, A. D.

"Toxicity and Radioprotective Properties of Serotonin-Containing Polyglucin Derivatives"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 3, May-Jun 71, pp 328-330

Abstract: Compounds containing serotonin bound to the polyglucin derivatives through azomethide and amide bonds had lower toxicity than those with ion-bonded serotonin. These derivatives produced a pronounced radioprotective effect in mice comparable to serotonin-creatinine sulfate. A conclusion is reached that addition of low-molecular weight medicinal compounds to water soluble polyglucin derivatives may be one of the choice methods for improving their properties.

1/1

UDC 621.762.224

USSR

GOLDAYEV, I. P., MOTORNENKO, A. P., SHEVCHENKO, A. P., and LASTIVNYAK, YU. A., Khar'kov Aviation Institute

"Gas-Jet Spraying of Liquid Metals and Alloys"

Kiev, Poroshkovaya Metallurgiya, No 2, Feb 71, pp 9-13

Abstract: One of the most productive methods of producing metal and alloy powders is by spraying a stream of melted metal. The authors of the present article have developed a method for producing these powders by means of a supersonic high-temperature gas jet, designed to improve the thermodynamic parameters of the gas. A gas generator operating by burning a mixture of compressed air and a hydrocarbon fuel such as gasoline is described and illustrated. The supersonic gas stream produced is directed at a stream of melted metal and causes it to break into droplets, producing the powder upon cooling. The gas generator allows the parameters of the gas stream at the output of the nozzle to

1/2

USSR

GOLDAYEV, I. P., et al., Poroshkovaya Metallurgiya, No 2, Feb 71, pp 9-13

be continually varied between 500 and 1500°K and 700 and 1250 m/sec velocity. Several types of nozzle apparatus are diagrammed. The new gas generator and total system for production of metal powder are claimed to improve spraying conditions, improve particle formation conditions, decrease air consumption, and allow the chemical composition of the powder to be altered by performing spraying in a reducing, neutral or oxidizing medium.

2/2

S

USSR

SHEVCHENKO, A. S., ANDRIYEVSKY, R. A., KALININ, V. P., and LYUTIKOV, R. A., Moscow

"Study of the X-Ray and Pycnometric Density of Interstitial Phases on a Zirconium Base"

Kiev, Academy of Sciences Ukr SSR, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 89-91

Abstract: The results of an investigation of the X-ray (γr) and pycnometric (γ_p) density of nitrides, carbides, hydrides, and carbo- and nitrohydrides of zirconium in a homogeneous field are presented. The density was measured on a vacuum pycnometer using ethyl alcohol. The measurement error was about 0.5%, and the scattering of experimental data on γ_p not more than ± 0.02 g/cm^3. Electrolytic zironium powder was used as the primary material. It was saturated with high purity nitrogen at 1300-1800°C for the production of nitrides. The hydrogen saturation was accomplished at 700-900°C, and the carbides were produced by a two-step synthesis of zirconium powder with graphite of spectral purity in a 10^{-6} mm mercury column vacuum at 1700-2000°C with intermediate pulverization.

1/2

USSR

SHEVCHENKO, A. S., et al, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 89-91

The ternary compounds were synthesized from Zr - ZrH and Zr - ZrC mixtures in a hydrogen medium at 900-1000°C. The variation in lattice parameters with the composition of the zirconium carbides and nitrides is presented in a table. On the basis of the results obtained it can be assumed that the defects of carbides, hydrides, and carbo- and nitrohydrides result from the incompleteness of the nonmetallic sublattice. In zirconium nitrides with a high content of nonmetallic impurities, the discrepancy between γ_r and γ_p may be due to the defect of the metallic sublattice, which disappears with increased material purity. Orig. art. has: 1 table and 13 references.

2/2

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--WIDTH OF (GD SUB2 O SUB3) SUBX (GD CRO SUB3) SUB1 MINUS X EPR LINES
-U-

AUTHOR--GLINCHUK, M.D., KARMAZIN, A.A., KOSTYRYA, A.A., LOPATO, L.M., SHEVCHENKO, A.V.

COUNTRY OF INFO--USSR

S

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1) 59-62

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EPR SPECTRUM, LINE WIDTH, LINE BROADENING, CHROMIUM OXIDE, GADOLINIUM COMPOUND, METAL OXIDE, CHEMICAL COMPOSITION, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1345 STEP NO--UR/0185/70/015/001/0059/0062

CIRC ACCESSION NO--AP0107818
ZZZZZZZZZZZZ UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0107818
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SYSTEM GD SUB2 O SUB3-CR SUB2 O SUB3 THE GD SUB2 O SUB3 CONTENT WAS VARIED BETWEEN 50 AND 100PERCENT. THE OBSD. INCREASE IN THE WIDTH OF THE EPR LINE WITH INCREASING GD SUB2 O SUB3 CONTENT AROSE FROM DIPOLE DIPOLE AND EXCHANGE INTERACTION. AT LOWER TEMP. THE INTENSITY OF THE EPR SIGNAL OF GDCRO SUB3 DECREASED; THE DISAPPEARANCE OF THE LINE AT 170DEGREESK WAS ASSIGNED TO A MAGNETIC ORDERING OF THE CR ION SUBLATTICE.

ZZZZZZZZZZZZ UNCLASSIFIED

USSR

Industrial

UDC: 539.374

SHEVCHENKO, A. Yu., Kiev

"Elastic-Plastic Stress State of a Long, Thick Wall Cylinder in an External Magnetic Field"

Kiev, Prikladnaya Mekhanika, Vol 18, No 8, Aug 73, pp 50-56.

Abstract: The elastic-plastic stress state of a long thick wall cylinder subjected to the external pressure of a quasistable magnetic field is studied. A theorem is formulated on simple loading for the case of deformation of a continuous medium under the influence of a quasistable magnetic field. The physical relationships are taken from the theory of slight elastic-plastic deformations. The problem is solved by the method of successive approximations. A specific problem is calculated, and analyzed from the standpoint of the technological problem of fitting.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--USE OF POLAROGRAPHY FOR CONTROLLING THE PRODUCTION OF
4,ACETYLNAPHTHALIC ANHYDRIDE -U-
AUTHOR-(05)-KOTOK, L.A., SHEVCHENKO, E.A., BEZUGLYY, V.D., KRASOVITSKIY,
B.M., SLEZKO, G.F.
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (1), 46-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REACTION KINETICS, NAPHTHENE, OXIDATION, POLAROGRAPHIC
ANALYSIS, ANPHTHALENE, CARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0739 STEP NO--UR/0436/70/000/001/0046/0048

CIRC ACCESSION NO--AP0119646
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119646

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF 4,ACETYLACENAPHTHENE (I) FORMATION AND OF ITS OXIDN. WITH NA SUB2 CR SUB2 OR SUB7 WERE STUDIED. I WAS DETD. IN THE SYNTHESIS PROCESS BY POLAROGRAPHIC ANAL. OF A SAMPLE IN A SUPPORTING ELECTROLYTE OF 0.02 N ET SUB4 NI SOLN. IN 92PERCENT MEOH. THE YIELD OF I DURING ACETYLATION OF ACENAPHTHENE IN THE PRESENCE OF SNCL SUB2 AT 100 AND 120DEGREES IS GIVEN AS A FUNCTION OF TIME. TO ANALYZE THE MIST. OF 4,ACETYLNAPHTHALIC AND 1,4,5,NAPHTHALENETRICARBOXYLIC ACIDS RESULTING FROM OXIDN. OF I, THE H SUB2 O LAYER CONTG. THEIR NA SALTS WAS ACIDIFIED WITH HCL AND EXTD. WITH C SUB6 H SUB6 AND ANALYZED POLAROGRAPHICALLY IN A SUPPORTING ELECTROLYTE OF 0.1 N CACL SUB2-ALC. SOLN. CONTG. 0.01 N LIOH. FACILITY: RUBEZHAN. KHIM. KOMB., RUBEZHNOE, USSR.

UNCLASSIFIED

Acc. Nr: AP0054029

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:
UR0065

102334r **Principles of n-alkane distribution in Ukrainian**
petroleums. Shevchenko, E. F.; Chernozhukov, N. I. (USSR).
Khim. Tekhnol. Topl. Masel 1970, 15(2), 9-13 (Russ). Ukrai-
nian petroleums were grouped with respect to *n*-alkane content in
the gasoline, diesel, and oil fractions into three classes. In the
first group from the northwestern part of the Dnieper-Donets
basin, *n*-alkane content was 30, 10-20, and 5-15%, in the second
group from the area adjacent to the southern zone of this region,
20-5, 30-5, and 15-30%, in the third group from the Carpathian
depression and from the Oktyabr'skoe deposit in the Black Sea
region, 10-15, 15-30, and 25-30%. Content of individual C_{6-12}
and C_{6-12} alkanes isolated from dearomatized fractions of the
paraffinic petroleums and identified by gas-liquid chromatog.
varied from 0.02 to 1.89% (C_5 and C_{23-26} hydrocarbon content
<1.0% and C_{28+} hydrocarbon content <0.3%). In the gasoline
fractions of the resp. groups, the iso/*n* ratio for the alkanes was
0.4-0.8, 1.1-2.2, and 2.2-3.2, and the C_6/C_5 ratio for the cyclo-
alkanes was 0.6-0.9, 3-18, and 1.0. With increasing b.p. and
mol. wt., alkane content in the diesel fractions decreased in the
first group, remained almost const. in the second, and increased
in the third, whereas naphthene content varied in the reverse
direction and aromatic hydrocarbon content increased steadily.

1/2

REEL/FRAME
19831123

11

AP0054029

For the oil fractions in the transition from the first to the third group, naphthenic hydrocarbon content fell, the C_6 fraction in the cycloalkanes rose from 40 to 60%, and paraffin content rose from 2 to 8%. In the resp. groups, hydrocarbon gas content was 4-5, 10-20, and 12-15%, and the C_{2+} hydrocarbon/CH_4 ratio for the gas was $\geqq 1$, 0.2-0.5, and 0.1-0.15. Lucile S. Davison

2/2

19831124

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXTRACTIVE PROPERTIES OF HEXYL PHENYLSULFONAMIDO PHENYLPHOSPHONATE
-U-
AUTHOR-(05)-SHEVCHENKO, F.D., KUZINA, L.A., AGEYEV, V.A., GULIK, G.A.,
NARBUT, A.V.
COUNTRY OF INFO--USSR

5

SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32 (3), 261-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, SULFONAMIDE, ORGANIC PHOSPHORUS COMPOUND,
SOLUBILITY, DISSOCIATION CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1303 STEP NO--UR/0442/70/032/003/0261/0263

CIRC ACCESSION NO--AT0123717
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AT0123717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHSO SUB2 N:PPHCL SUB2 (0.005 MOLE) IN 25 ML C SUB6 H SUB6 WAS TREATED WITH 0.23 G NA IN 15 ML HEXYL ALC. 12 HR TO GIVE PHSO SUB2 N:PPH(OC SUB6 H SUB13) SUB2 (I). I (0.001 MOLE) WAS HEATED 3 HR WITH 15 ML 0.4N AQ.-ALC. NAOH TO GIVE 60PERCENT PHSO SUB2 N(NA)P(O)PH(OC SUB6 H SUB6, DISTRIBUTION CONST. BETWEEN C SUB6 H SUB6 AND H SUB2 O, AND DISSOCN. CONST. (2.44) OF THE FREE ACID WERE DETD. FACILITY: KIIV. DERZH. UNIV., KIEV, USSR.

UNCLASSIFIED

PROCESSING DATE--30OCT70

UNCLASSIFIED

1/2 011

TITLE--EXTRACTION OF MAGNESIUM WITH THE DIOCTYL ESTER PHENYLSULPHONYLAMIDOPHOSPHORIC ACID, IN ANALYSIS -U-

AUTHOR-(02)-SHEVCHENKO, F.D., KUZINA, L.A.

COUNTRY OF INFO--USSR

SOURCE--UKRAIN. KHIM. ZHUR., JAN. 1970, 36, (1), 94-95

DATE PUBLISHED----JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MAGNESIUM, METAL CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1986

STEP NO--UR/0073/70/036/001/0094/0095

CIRC ACCESSION NO--AP0118945

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTRACTION OF MG BY MEANS OF THE DIOCTYL ESTER OF PHENYLSULPHONYLAMIDOPHOSPHORIC ACID, C SUB6 H SUB5 SO SUB2 NHPO(OC SUB8 H SUB17) SUB2, FOR PURPOSES OF ANALYSIS WAS STUDIED AS A FUNCTION OF THE PH OF THE EQUEOUS PHASE AND THE CONCENTRATION OF THE REAGENT (IN BENZENE SOLUTION). THE DISTRIBUTION COEFF. OF THE MG BETWEEN THE ORGANIC AND AQUEOUS PHASES ROSE SHARPLY WITH INCREASING PH, IN AGREEMENT WITH THEORY. THE COMPLEX PASSING INTO THE ORGANIC PHASE HAD THE COMPOSITION MGA SUB2 .2H SUB2 O(A EQUALS ACID RADICAL). MINUS G.A.

UNCLASSIFIED

USSR

UDC 621.385.632:6

KOVALEV, I. S., Corresponding Member of the Belorussian SSR Academy of Sciences, KURAYEV, A. A., DEMIDOVICH, Ye. M., SHEVCHENKO, F. G., Minsk Radio Engineering Institute

"On Calculation of a Gyroamplifier With Takeoff by Coupled Cavities"

Minsk, Doklady Akademii Nauk BSSR, Vol 17, No 11, Nov 73, pp 1007-1010

Abstract: The paper presents optimized versions of energy taps based on coupled resonators in a stability region where self-excitation of the tap is impossible for any electron beam currents and optimized versions of regenerative energy taps where the working current is a given amount lower than the starting current for a given Q of the resonator system of the tap.

1/1

USSR

UDC 621.385.632:621.372

KOVALEV, I. S., Corresponding Member of the Academy of Sciences BSSR, KURAYEV, A. A., DEMIDOVICH, YE. M., SHEVCHENKO, F. G., Minsk Radio Engineering Institute

"Efficiency-Optimized Section Gyroamplifiers of the Resonator Type"

Minsk, Doklady Akademii nauk BSSR, No. 12, Dec 71, pp 1082-1084

Abstract: Cascade groupings of electrons in sectioned gyroresonance amplifiers is used to achieve high electron efficiency and ensure at the same time high stability of the amplifier. It is noted that in ordinary two-resonator designs of gyroamplifiers consisting of a modulator, a grouping region and an energy selector, the conditions for achieving high efficiencies and the conditions for ensuring a high stability reserve are incompatible. Effective grouping of electrons in the selector is required to achieve high efficiencies in two-resonator designs but it is achieved only for a large length or a high Q of the resonator of the selector; calculations have shown that efficiency-optimal regimes of a two-resonator design are in the generation region and therefore it is necessary to introduce into the amplifier circuit an additional resonator to provide additional grouping of the electron flow. The Rosenbrock method of

1/2

USSR

KOVALEV, I. S., et al, Doklady Akademii nauk BSSR, No. 12, Dec 71, pp 1082-1084

seeking the extremum of a multidimensional function was used to optimize the circuit of the sectioned resonator-type gyroamplifier, since it is most suitable for this class of problems. The results show that efficiencies of 80% are achieved with a doubled stability reserve in the optimized circuit of the gyroamplifier with autonomous pregrouping.

UDC 621.385.632:621.372

USSR

KOVALEV, I.S., KURAYEV, A.A., DEMIDOVICH, YE.M., [redacted]

"Gyro-Resonant Devices With A Nonuniform Magnetostatic Field In An Interaction Space"

Dokl. AN BSSR (Reports Of The Academy Of Sciences, Bellorussian SSR), 1971, 15, No 10, pp 896-899 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A152)

Translation: Gyro-resonant devices (GRD) have promise as a source of microwave oscillations of great power, and consequently the problems of increasing their electronic efficiency deserve detailed study. One of the methods of increasing the efficiency of GRD is the choice of the optimum distribution of the magnetostatic field in an interaction space. On the basis of a special form of the method of averages, nonlinear equations are derived and thoroughly analyzed for a GRD with an adiabatic nonuniformity of the magnetostatic field of arbitrary form and amplitude in an interaction space. Computed data are presented for the simplest model of a gyromonotron with a nonuniformity of the specified form. The high value of the electronic efficiency shows that from the energy point of view, GRD have a significant advantage in comparison with classical microwave devices. 5 ref. Summary.

1/1

UDC 621.385.632

USSR

KOVALEV, I. S., Corresponding Member of the Academy of Sciences of the BSSR,
KURAYEV, A. A., DEMIDOVICH, Ye. M., SHEVCHENKO, [redacted], Minsk Radio Engineering Institute

"Efficiency Optimized Gyro Amplifier Circuits With Waveguide Energy Tap"

Minsk, Doklady Akademii Nauk BSSR, Vol 16, No 1, pp 24-27

Abstract: Gyroresonance amplifiers with waveguide energy tap have much higher self-excitation currents than amplifiers with a cavity (resonator) tap, and can be used at high power levels. In order to reach a high efficiency in circuits with a short waveguide tap, electron oscillators must be efficiently pregrouped, and therefore the authors consider autonomous and nonautonomous resonator pregroupers having fairly broad detuning of the resonance frequency relative to the working frequency, in addition to considering conventional circuits. The Rosenbock method was used in efficiency optimization of the gyro amplifier circuits, and in solving the boundary value problem for a waveguide tap. The resultant data indicate that introducing a pregrouper appreciably improves the efficiency of a gyro amplifier with waveguide tap, the efficiency of optimized waveguide circuits approaching that of optimized resonator circuits ($\eta_1 = 81\%$). Four tables, bibliography of one title.

1/1

1/2 030 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THE TEMPERATURE OF THE WELD POOL DURING SEAM WELDING WITH SINTERED
ELECTRODE -U-

AUTHOR-(03)-KORTELEV, G.A., NIKOLAYENKO, M.R., SHEVCHENKO, G.D.

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZV., JAN. 1970, (1), 2-3

DATE PUBLISHED----JAN70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, METHODS AND EQUIPMENT

TOPIC TAGS--SEAM WELDING, TEMPERATURE DISTRIBUTION, THERMOCOUPLE, WELDING
ELECTRODE, WELD ZONE, LIQUID METAL PROPERTY, SINTERED ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1279 STEP NO--UR/0135/70/000/001/0002/0003

CIRC ACCESSION NO--AP0136685

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0136685

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD USED TO STUDY THE TEMP. DISTRIBUTION IN THE WELD POOL DURING SEAM WELDING IS DESCRIBED AND THE APPARATUS ILLUSTRATED. MEASUREMENTS WERE MADE BY FIVE (W-MO MINUS 5PERCENT AL) THERMOCOUPLES, SHIELDED BY QUARTZ TUBES, IMMERSED IN THE BATH AT DIFFERENT POINTS AND CARRIED BY THE WELDING ELECTRODE. RESULTS FOR DIFFERENT WELDING CONDITIONS ARE PRESENTED IN GRAPHICAL FORM.

UNCLASSIFIED

USSR UDC 543.52:546.21

GORENKO, A. F., SKAKUN, N. A., SHEVCHENKO, G. M., ZADVORNYY, A. S.,
BUGAYEVA, N. I., and KLYUCHAREV~~, A. P.~~

"Gamma-Activation Analysis of Carbon in Uranium and Thorium"

Moscow, Atomnaya Energiya, Vol 34, No 1, Jan 73, pp 53-54

Abstract: In determining carbon in fissionable elements and materials on their base, a higher sensitivity than by conventional methods results when the carbon is burned out in the oxygen flux from the samples preliminarily irradiated with gamma-quanta. In this case C^{11}, developing in the $C^{12}(\gamma, n)$ reaction, is selectively extracted from the active matrix and the amount of collected $C^{11}O_2$ is determined from the radioactive decay of the carbon isotope by a sensitive nuclear detector. The process of accumulation and decay of $C^{11}O_2$ molecules, extracted from U, Th, and $(C_{15}H_{12}O_6)_n$ samples, irradiated by bremsstrahlung of gamma-quanta generated on tungsten converter by a 30-Mev electron bundle, is demonstrated. The activation spectrum in ascarite in determining carbon in uranium carbide is shown. Under the selected activation conditions (electron energy 30 Mev, current 10 μA, irradiation 20 min.), the sensitivity in determining carbon in uranium and thorium is $1.3 \cdot 10^{-7}$g. Two figures, four bibliographic references.

1/1

Hydraulic and Pneumatic

USSR UDC 627.81:551.48(47+57)

BOYKOVA, K. G., SHEVCHENKO, G. N., and LEBEDEV, V. A.

"Principles of Hydrologic Calculations When Planning Engineering Measures to Protect National Economic Projects in the Far East from Flooding (1967)"

Izuch. i ispol'z vodn. resursov SSSR. 1966-1967 -- V sb. (Study and Use of USSR River Resources. 1966-1967 — Collection of Works), Moscow, Nauka Press, 1970, p 74 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D20)

Translation: This article contains a study of the problem of expediency of applying the time lag constant (for the rise and fall period) in calculations of high rain floods causing significant flooding of shore areas. One of the problems was to determine the possible decrease of storage of the Zeyskiy and Dagmarskiy Hydroelectric Power Plant Reservoirs and how to avoid significant flooding in the tailrace in doing this. The obtained scheme for analyzing the flood hydrograph in the outlet considering the natural transformation offers the possibility of sufficiently well-founded calculation of the drop in height of the flood wave as the result of regulating the runoff from reservoirs and channel capacity. An example of calculating the inflow and transformation of flood waters by channel capacity and reservoirs considering

USSR

BOYKOVA, K. G., et al., Izuch. i ispol'z vodn. resursov SSSR. 1966-1967 -- V sb. (Study and Use of USSR River Resources. 1966-1967 -- Collection of Works), Moscow, Nauka Press, 1970, p 74 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D20)

the flood formation centers is presented. The ordinates of the lag curves for τ and n from 2 to 12 were calculated on the Promin' computer. Calculations of the maximum flood runoff are presented.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--SENSITIZATION OF HYDRAZINE PHOTOOXIDATION IN AN AQUEOUS SOLUTION BY LEAD AND TITANIUM OXIDES AND HYDROXIDES -U-

AUTHOR--SHEVCHENKO, G.P., PUSHKAREVA, T.M., SVIRIDOV, V.V.

S

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2) 546

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDRAZINE, TITANIUM OXIDE, HYDROXIDE, LEAD OXIDE, PHOTOOXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0274 STEP NO--UR/0076/70/044/002/0546/0546

CIRC ACCESSION NO--AP0113205

UNCLASSIFIED

272 020 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0113205

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF EFFECTIVE PHOTOOXIDN. OF N SUB2 H SUB4 IN AERATED AQ. SOLNS. CONTG. SOLID ADDNS. OF PB HYDROXIDE AND OXIDE, TI HYDROXIDE, AND ONE OF THE CRYST. MODIFICATIONS OF TIO SUB2, ANATASE, IS SHOWN. THESE ADDITIVES ARE SENSITIZERS OF THE PHOTOREACTION MAKING THE REACTION POSSIBLE UNDER THE ACTION OF LIGHT NOT ABSORBED BY N SUB2 H SUB4 SOLN. BUT ABSORBED BY THE ADDITIVES. RUTILE TIO SUB2 HAS NO SUCH ACTIVITY. IN AN ACIDIC MEDIUM NH SUB3, N SUB2, AND H SUB2 O ARE PRODUCED, AND IN A NEUTRAL OR WEAKLY ALK. MEDIUM N SUB2 AND H SUB2 O. THIS DIFFERENCE IS DUE TO THE PRESENCE OF N SUB2 H SUB5 PRIME POSITIVE IN ACIDIC MEDIA AND N SUB2 H SUB4 IN NEUTRAL OR ALK. MEDIA. THE SENSITIZED ACTIVITIES OF PB(OH)SUB2 AND VARIOUS CRYST. MODIVICATIONS OF PBO (TETRAGONAL AND RHOMBIC) THAT WERE NOT CALCINED DURING PREPN. ARE COMPARABLE. CALCINATION AT 600DEGREES INCREASES THE ACTIVITY NOTICERABLY AND IN SPITE OF A CERTAIN DECREASE IN SP. SURFACE. DEHYDRATION OF TI HYDROXIDE AT 400DEGREES FORMS ANATASE WITH A BADLY ORDERED CRYSTAL LATTICE AND INCREASES THE SENSITIZING ACTIVITY. AT HIGHER TEMP. THE ACTIVITY IS DECREASED. THE IONS AG PRIME POSITIVE, MN PRIME2 POSITIVE, AL PRIME3 POSITIVE, CR PRIME3 POSITIVE, LI PRIME POSITIVE, CU PRIME2 POSITIVE HAVE A COMPLEX EFFECT ON PBO ACTIVITY THAT DEPENDS ON THE METHOD OF PREPN. OF THE SENSITIZER. THESE IONS, EXCEPT FOR CR PRIME3 POSITIVE, WHEN ADDED TO TIO SUB2 AT 800DEGREES HAVE AN ACTIVATING EFFECT. SENSITIZING ACTIVITY IS ALSO FOUND WITH FE(OH)SUB3, ZNO, ZNS, HGS (RED), HGS (BLACK), HGSE, HGBR SUB2, HGI SUB2, HG SUB3 SE SUB2 I SUB2, HGBR SUB2. NHGSE, HG SUB3 S SUB2 I SUB2.

UNCLASSIFIED

ZZZZZZZZZZZZ

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC

ITLE--BLAST FURNACE GRANULATED SLAGS RAISE THE QUALITY OF SLAG PORTLAND
CEMENT -U-

UTHOR-(05)-KRYZHANOVSKAYA, I.A., DOROSHENKO, N.M., POPUDRENKO, M.K.,
TOKAR, V.A., SHEVCHENKO, I.I.

S ✓

OUNTRY OF INFO--USSR

OURCE--TSEMENT 1970, (3), 20-1

ATE PUBLISHED--------70

UBJECT AREAS--MATERIALS

OPIC TAGS--BLAST FURNACE SLAG, CEMENT

ONTROL MARKING--NO RESTRICTIONS

OCUMENT CLASS--UNCLASSIFIED
ROXY FICHE NO-----FD70/605018/C08 STEP NO--UR/0101/70/000/003/0020/0021

IRC ACCESSION NO--AP0140817

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140817

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAB. AND PRODUCTION TESTS SHOW THAT PORTLAND CEMENT BASED ON SLAGS OF BLAST FURNACE GRANULATION RAISE CONSIDERABLY THE CEMENT QUALITY AND INCREASE OUTPUT. FACILITY: KRIVOROZH. TSEM. ZAVOD., KRIVOI ROG, USSR.

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF PHOTOSYNTHESIS ON CORN PRODUCTIVITY IN RELATION TO SOIL
FERTILIZING -U-
AUTHOR-(04)-KNIGA, M.I., KNIGA, N.M., NASONOVA, M.G., SHEVCHENKO, I.M.

5

COUNTRY OF INFO--USSR

SOURCE--DOKL. VSES. AKAD. SEL'SKOKHOZ. NAUK 1970, (2), 11-13

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREAL CROP, MINERAL FERTILIZER, PHOTOSYNTHESIS, CHLOROPHYLL,
BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605009/D10 STEP NO--UR/3275/70/000/002/0011/0013

CIRC ACCESSION NO--AT0140085
UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AT0140085
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDEXES OF PHOTOSYNTHESIS WERE STUDIED AT VARIOUS STAGES OF GROWTH OF CORN IN RELATION TO THE FERTILIZER MODIFICATIONS APPLIED: N-P-K, N-P, N-K, AND P-K. THE LEVELS OF FERTILIZERS WERE N 90, P 25, AND K 20 KG PER HA. APPLICATION OF N-P-K, N-P, AND N-K INCREASED PRODUCTIVITY. IN THE STAGE OF COB FORMATION THE LEVEL OF DRY MATTER IN THE LEAVES REACHED 31PERCENT (N-P-K), WITH THE CONTENT OF CHLOROPHYLL INCREASING SIMULTANEOUSLY. N-P-K HAD THE BEST EFFECT ON THE AMT. OF LEAF CAROTENE.
FACILITY: KHAR'KOV. ZOOVET. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NATURAL GAS POTENTIALS IN DEVONIAN FORMATIONS IN THE SOUTHWESTERN PART OF THE DNIEPER DONETS SYNCLINE -U-

AUTHOR-(03)-VYSOCHANSKIY, I.V., ZELENSKAYA, P.I., SHEVCHENKO, I.M.

COUNTRY OF INFO--USSR

SOURCE--GEOL. ZH. (UKR. ED.) 1970, 30(1), 120-1

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--NATURAL GAS, CHEMICAL COMPOSITION, METHANE, ETHANE, PROPANE, BUTANE, PENTANE, NITROGEN, CARBON DIOXIDE, PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION, SODIUM CHLORIDE, CALCIUM CHLORIDE, EXPLORATORY DRILLING, SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1547 STEP NO--UR/0008/70/030/001/0120/0121

CIRC ACCESSION NO--AP0118530

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118530

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVONIAN FORMATIONS IN THE LEVENTSOVSK AREA ARE OPENED BY 4 DRILL HOLES AT DEPTHS OF 2400-3000 M. THEY CONSIST OF ARENACEOUS AND ARGILLACEOUS ROCKS, 230-430 M THICK, WITH INTERLAYERS OF CARBONATITES AND ANHYDRITES. TWO OF THE HOLES HAD GAS FLOWS OF SMALLER THAN OR EQUAL TO 3800 M PRIME3-DAY. THE FREE GAS CONTAINED CH SUB4 91.72, C SUB2 H SUB6 3.74 C SUB3 H SUB8 1.54, C SUB4 H SUB10 0.66, C SUB5 H SUB12 0.22, N PLUS RARE GASES 1.87, AND CO SUB2 0.25PERCENT. THE FORMATION WATERS, OBTAINED FROM THESE DRILL HOLES HAD A HIGH TOTAL MINERAL CONTENT (207.2-243.72 G-L.), WERE OF CL-CA TYPE AT NA PRIMEPOSITIVE-CL PRIMENEGATIVE 0.77-0.78 AND SO SUB4 PRIME2 NEGATIVE-CL PRIMENEGATIVE 0.018-0.028, AND CONTAINED I 18.5-25.6, BR 106.6-132.7, AND B 30.15-42.55 MG-L. FACILITY: TREST KHARKIVNAFTAGAZROZVIDKA, KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 621.314.61(088.8)

SAMCHELEYEV, YU. P., SHEVCHENKO, I.S., ZELENOV, A.B.

"Phase-Shifting Device"

USSR Author's Certificate No 259997, filed 16 Dec 68, published 24 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B525P)

Translation: A bridge phase-shifting device is proposed, two arms of which are formed by secondary semi-windings of a feed transformer, and the other two by a capacitor and a control element. A counter-series connected source of d-c and a semiconductor diode are used as a control element. The load is connected to the diagonal of the bridge across a supplementary semiconductor diode connected in harmony with the first semiconductor diode. A change in the magnitude of the voltage of the control source of d-c which blocks the semiconductor diode, leads to a change of the equivalent resistance of the bridge arm and to a phase shift of the output voltage. The proposed phase-shifting device assures a measurement range of the output signal phase to 270°. The principal circuit of the device is shown. 1 ill. L.R.

S

UDC 633.15+581.2

USSR

OSADCHIY, A. P., SHEVCHENKO, I. S., and KOLESNICHENKO, G. S., Volgograd Agricultural Institute

"Nature of the Transformation of Corn Leaf Impedance as Affected by Smut"

Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 1, 1970, pp 114-116

Abstract: A study was conducted of the changes in the passive electrical properties of corn plant tissues affected by smut (Ustilago zeae). Experimental results indicate that the introduction of a heterotroph together with its system of physiologically active substances changes the normal course of life processes in the host plant, and disrupts its natural coordination and harmonious metabolic processes, the transformation of which is associated with electrical phenomena occurring in plants.

A definite relationship was established between the kinetics of the course of the disease and change in the electrophysiological parameters of the inner tissues, associated with a number of factors. The chemical composition and salt composition of the mycelium differ

1/3

USSR

OSADCHIY, A. P., et al., Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 1, 1970, pp 114-116

from these indices in the host plant. Enlargement of the mycelium and its intercellular substances produces a change in the ionic composition of the measured substrate and its conductor properties. The mycelium of Ustilago zeae developing in plant tissues not only fills a series of places but often penetrates into host tissue cells, disturbing tonoplast completeness and affecting the electrical conductivity of the tissues.

Investigation of this disease also indicated a disturbance of hormone metabolism and the accumulation of large amounts of the beta-indolylacetic acid associated with it. Activity of this acid causes the formation of blisters which cannot help but change the impedance characteristics. Antibiotic substances, formed in plant tissues in response to the smut, change the ionic composition of the diseased sector and influence the passive electrical properties of the plant. Hyperplasia and hypertrophy of the smut-affected plant tissues, which ensure existence of the parasite because of the increased

2/3

USSR

OSADCHIY, A. P., et al., Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 1, Jan 70, pp 114-116

inflow of nutrients from plant to pathogen, change the electrical characteristics of the host plant.

3/3

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--RAMAN AND INFRARED ABSORPTION SPECTRA OF SOME BUTOXYSILANES -U-

AUTHOR--OZOLINS, L., KOVALEV, I.F., ARBUZOVA, V.A., SHEVCHENKO, I.V.,
VORONKOV, M.G.
COUNTRY OF INFO--USSR

S

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 47-61

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RAMAN SPECTRUM, IR SPECTRUM, ORGANIC SILANE, ORGANIC OXYGEN
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0440 STEP NO--UR/0464/70/000/001/0047/0061

CIRC ACCESSION NO--AP0107046
UNCLASSIFIED

CIRC ACCESSION NO--AP0107046

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RAMAN AND IR SPECTRA OF ME SUB3 SI(OBU) (I), ME SUB2 SI(OBU) SUB2 (II), MESI(OBU) SUB2 (III), SI(OBU) SUB4 (IV), SI(SEC-BUO) SUB4 (V), AND SI(ISO-BUO) SUB4 (VI) WERE MEASURED. FREQUENCIES, INTEGRAL INTENSITIES, HALF BANDWIDTHS, AND DEGREES OF DEPOLARIZATION OF THE RAMAN LINES ARE TABULATED. THE SCATTERING COEFFS. IN THE SCALES 5B PRIME2 PLUS 7G PRIME2 (S) AND 5B PRIME2 PLUS 13G PRIME2 (R), THE TRACE, AND THE ANISOTROPY OF THE POLARIZABILITY TENSOR WERE CALCD. ESTN. OF FORCE CONSTS. FOR III AND IV WAS MADE. THE DISPERSION OF THE REFRACTION COEFF. WAS STUDIED IN II, V, AND VI AND THE ABS. RAMAN SCATTERING CROSS SECTIONS FOR THE STOKES WAVES NU SUB3 (SI-O) WERE EVALUATED. THE CORRECTED FREQUENCIES, HALF-BANDWIDTHS, AND ABS. INTENSITIES OF SELECTED IR VIBRATIONS WERE OBTAINED BY NUMERICAL BAND SEPN. THE EFFECT OF SUBSTITUENTS ON THE STUDIED PARAMETERS IS DISCUSSED.

1/2 030 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ON THE STATE OF CARBOHYDRATE AND FAT LIPOID METABOLISM IN PATIENTS
WITH DERMATIC DISEASES -U-
AUTHOR--SHEVCHENKO, I.V., LESNICHIY, A.V.

COUNTRY OF INFO--USSR

S

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 2, PP 28-30

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARBOHYDRATE METABOLISM, LIPID METABOLISM, DERMATITIS, BLOOD
CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1668 STEP NO--UR/0206/70/000/002/0028/0030

CIRC ACCESSION NO--AP0101723

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0101723
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STATE OF CARBOHYDRATE AND FAT LIPOID METABOLISM WAS STUDIED IN 92 PATIENTS WITH DIFFERENT DERMATIC DISEASES (ECZEMA 34, PYODERMATITIS 36, DERMATOSIS 22) AND DISORDERS OF CARBOHYDRATE METABOLISM WERE DETECTED IN 68 PATIENTS. IN YOUNGER PATIENTS A GREAT INCREASE OF THE SUGAR LEVEL IN THE BLOOD WAS MORE FREQUENTLY OBSERVED AFTER ALIMENTARY SUGAR LOADING, WHILE IN PATIENTS OVER 50 YEARS OLD A PROLONGED SUGAR CURVE WAS FOUND. THESE DISORDERS WERE MORE MARKED IN PATIENTS WITH ECZEMA, PARTICULARLY IN CASES WITH A PROTRACTED COURSE. SUBSEQUENTLY 10 PATIENTS WERE FOUND TO HAVE DIABETES MELLITUS. IN ADDITION TO DISORDERS OF CARBOHYDRATE METABOLISM IN PATIENTS WITH DERMATIC DISEASES, DISTURBANCES OF FAT LIPOID METABOLISM WERE DETECTED, PARTICULARLY FREQUENTLY IN PATIENTS WITH PROTRACTED ECZEMA. MARKED CHANGES OF FAT LIPOID METABOLISM WERE OBSERVED ALMOST IN ALL CASES OF NEWLY DISCOVERED DIABETES MELLITUS AND THEY MAY BE CONSIDERED TO BE ONE OF EARLY MANIFESTATIONS OF THIS DISEASE.

USSR

UDC: 539.1.074

SHEVCHENKO, K. M., MINAKOVSKIY, V. M., and TSARENKO, N. V:

"Radiation Energy Sensor"

Leningrad, Priborostroyeniye, No 6, 1972, pp 119-121

Abstract: The sensor described in this paper overcomes the difficulty in radiometers with nonselective elements in which protective windows made of materials which are diathermal in the near infrared region have the effect of making the readings of the instrument depend on the infrared radiation spectrum, thus depriving the instrument of its basic advantage. The principle of the device proposed by the authors is based on the existence of a unique dependence between the radiation flux incident on its sensitive element and the difference in temperature between the center and periphery of the sensitive element. This latter is a disc of 4 mm in diameter, made of constantan foil 0.05 mm thick, soldered along its periphery to the end of a copper block. Part of the energy output by the foil flows radially to the block and part to the surrounding medium. The intensity of the incident energy is reflected in the aforementioned difference in temperature. A table of the technical characteristics of the radiometer using this type of sensor is given. The authors are with the Kiev Polytechnical Institute.

1/1

S

USSR

UDC 539.374

SHEVCHENKO, K. I M.

"Fundamentals of Mathematical Methods in the Theory of Pressure Processing of Metals. Textbook for VUZ Students of Metallurgical Specialties"

Osnovy matematicheskikh metodov v teorii obrabotki metallov davleniyem. Uchebn. posobiye dlya stud. metallurg. spetsial'nostey vuzov (cf. English above), Moscow, "Vyssh. shkola", 1970, 351 pp, ill., 71 k (from RZh-Mekhanika, No 5, May 70, Abstract No 5V401K)

[No abstract]

1/1

USSR

UDC: 539.411

KOZIN, R. G., SHEVCHENKO, K. N. (Moscow)

"Nonsteady Creep in the Components of a Cylinder and a Sphere"

Moscow, Mashinovedeniye, Jan-Feb 72, pp 72-78

Abstract: In the fuel element of a nuclear reactor (cylinder or a sphere of fissionable material enclosed in a cylindrical or spherical shell) operating at high temperature, swelling of the fissionable material takes place, as well as creep. These two conditions can bring about considerable change in the initial elastoplastic stresses and, when the reactor is stopped, brings about residual stresses which are sufficient to destroy the reactor. Estimation of the possibility of such destruction requires the determination of current stresses. A variational equation is obtained which describes nonsteady creep in a long heat-releasing cylinder (or sphere) and in the shell surrounding it, when the heat release is accompanied by a relative increment of each free element of the cylinder (sphere), which is independent of the stressed state. An approximate solution for the process of redistribution of the elastoplastic axisymmetric (centrosymmetric) stresses in the systems under consideration is constructed. A numerical example of an exact solution and an approximate solution is presented. Three references.

1/1

1/2 039 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--BASIC MATHEMATICAL METHODS IN THE THEORY OF PRESSURIZED METALWORKING -U-
AUTHOR--SHEVCHENKO, K.N.

5

COUNTRY OF INFO--USSR

SOURCE--(OSNOVY MATEMATICHESKIKH METODOV TEORII OBRABOTKI METALLOV DAVLENIYEM) MOSCOW. VYSSHAYA SHKOLA. 1970. 350 PP.
DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, MATHEMATICAL SCIENCES
TOPIC TAGS--PLASTIC DEFORMATION, METAL ROLLING, HIGH PRESSURE EFFECT, THERMAL EFFECT, STRESS, METALWORKING, MATHEMATIC METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1695 STEP NO--UR/0000/70/000/000/0001/0350

CIRC ACCESSION NO--AM0130567
UNCLASSIFIED

2/2 039 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AM0130567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. CHAPTER I. STRESS. DEFORMATION 5. II. LAWS OF ELASTIC AND PLASTIC DEFORMATIONS OF A SOLID BODY 38. III. DIFFERENTIAL EQUATIONS. FORMULATION OF ELASTIC AND PLASTIC PROBLEMS 63. IV. CERTAIN PROBLEMS OF ELASTICITY AND PLASTICITY APPLICABLE TO THE WORKING OF METAL WITH PRESSURE 81. V. THE METHOD OF CHARACTERISTICS AS APPLIED TO PROBLEMS OF ROLLING WIDE STRIPS 124. VI. THE APPLICATION OF THE CHARACTERISITCS METHOD TO PROBLEMS OF PLASTICITY AND OTHER PROBLEMS OF METAL WORKING WITH PRESSURE 167. VII. DIRECT METHODS OF VARIATION CALCULUS IN THE THEORY OF ELASTICITY AND PLASTICITY AND THEIR APPLICATION IN PROBLEMS OF WORKING METAL WITH PRESSURE 192. VIII. THE SIMPLEST PROBLEMS OF VOLUME (PROFILE) WORKING OF METAL WITH PRESSURE 228. IX. AXISYMMETRICAL PROBLEMS OF WORKING METAL WITH PRESSURE 259. X. THERMAL STRESSES AND DEFORMATION AT THE ELASTIC AND PLASTIC STATE OF THE BODY 289. XI. REFERENCE INFORMATION ON MATHEMATICS 319. LITERATURE 344. THIS IS A MANUAL FOR METALLURGY SPECIALTIES IN HIGHER SCHOOLS. IT CONTAINS SOLUTIONS TO PROBLEMS OBTAINED MOSTLY BY APPROXIMATE MATHEMATICAL METHODS. SOME OF THEM ARE OF CONSIDERABLE SCIENTIFIC AND PRACTICAL INTEREST BUT DIFFICULT FOR THE OBTAINMENT OF ANALYTICAL SOLUTIONS AND ARE THEREFORE ONLY FORMULATED.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ON THE ROLE OF THE A-FACTOR IN THE STREPTOMYCINE BIOSYNTHESIS -U-

AUTHOR-(05)-TOVAROVA, I.I., KORNITSKAYA, YE.YA., PLINER, S.A., SHEVCHENKO,
L.A., ANISOVA, L.N.
COUNTRY OF INFO--USSR

1 9

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3,
PP 427-434
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STREPTOMYCIN, BIOSYNTHESIS, ACTINOMYCES, BACTERIA MUTATION,
TRANSAMINASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0495 STEP NO--UR/0216/70/000/003/0427/0434

CIRC ACCESSION NO--AP0126244
UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--AP0126244 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE DISCUSSED CONCERNING THE
A-FACTOR CONTENTS IN VARIOUS ACTINOMYCES STREPTOMYCINI STRAINS. THE
PRESENCE OF THE A-FACTOR IN ACTIVE STREPTOMYCINE PRODUCERS (STRAINS 3213
AND G-5) WAS SHOWN AS WELL AS IN SOME MUTANT STRAINS WITH DISTURBED
BIOSYNTHESIS. ALL THE MUTANTS WHICH HAVE FAILED TO SYNTHESIZE THE
A-FACTOR DO NOT PRODUCE ANY STREPTOMYCINE, WHILE ADDITION OF THE
A-FACTOR RESTITUTES THEIR ABILITY TO PRODUCE THE ANTIBIOTIC. NEOMYCINE
AND CANAMYCINE PRODUCENTS DO NOT FORM ANY A-FACTOR IN THE COURSE OF
FERMENTATION AND CONSEQUENTLY THIS SUBSTANCE DOES NOT PARTICIPATE IN THE
BIOSYNTHESIS OF THE SAID ANTIBIOTICS. IN THE ABSENCE OF THE A-FACTOR
THE INACTIVE MUTANT 1439 DOES NOT PRODUCE ANY STREPTIDINE AND DISPLAYS A
LOW TRANSAMIDINASE ACTIVITY. WHEN GROWN IN THE PRESENCE OF THE A-FACTOR
THIS STRAIN HAS A HIGH TRANSAMIDINASE ACTIVITY AND SYNTHESIZES
CONSIDERABLE AMOUNTS OF STREPTIDINE AND STREPTOMYCINE. THESE
OBSERVATIONS SUGGEST THAT THE A-FACTOR PARTICIPATES IN THE FORMATION OF
THE STREPTIDINE PART OF THE STREPTOMYCINE MOLECULE. FACILITY:
INSTITUTE OF CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INFRARED SPECTROSCOPIC STUDY OF NITRATES OF SOME METALS IN ACETONE WATER SOLUTIONS -U-

AUTHOR-(02)-SHEVCHENKO, L.L., SHURKHAL, T.M.

COUNTRY OF INFO--USSR

S

SOURCE--UKR. KHIM. ZH. 1970, 36(2), 199-203

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTROSCOPY, NITRATE, ACETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1921 STEP NO--UR/0073/70/036/002/0199/0203

CIRC ACCESSION NO--AP0118883

UNCLASSIFIED

2/2 017
UNCLASSIFIED
CIRC ACCESSION NO--AP0118883 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE N1 SUB3 ABSORPTION AT 1390 CM
PRIME NEGATIVE 1 IS ATTRIBUTED TO THE SUBGAMMA3 (EPRIME) VIBRATION OF
THE D SUB3H SYSTEM. THIS IS CHARACTERISTIC OF A FREE STANDING NO SUB3
PRIME NEGATIVE ION AND DECREASES IN INTENSITY AS THE NO SUB3 PRIME
NEGATIVE IS MORE FIRMLY COORDINATED TO A CATION INTO A SYSTEM OF C SUB2V
SYMMETRY. ALTHOUGH ANHYD. CO (NO SUB3) SUB2 AND CD(NO SUB3) SUB2 SEEM
TO POSSESS NO SUB3 PRIME NEGATIVE OF D SUB3H SYMMETRY, THEIR AQ. SOLNS.
SHOW PROGRESSIVE SHIFTS TOWARD C SUB2V SYMMETRY AS ME SUB2 CO IS ADDED.
TH(NO SUB3) SUB4.4H SUB2 O AS A SOLID HAS NO SUB3 PRIME NEGATIVE IONS OF
C SUB2V SYMMETRY, BUT IN SOLN. SOME OF THE D SUB2H TYPE ARE PRESENT.
THESE DECREASE IN NO. AS ME SUB2CO IS ADDED. AT THE SAME ME SUB2CO
CONCN. THE ORDER OF DECREASING C SUB2V SYMMETRY IS TH, GD, CO. IN ME
SUB2CO SOLNS. CONTG. CO(NO SUB3) SUB2 AND CD(NO SUB3) SUB2 THE CARBONYL
STRETCH OF ME SUB2 CO IS DISPLACED FROM 1709 TO 1670-1 CM PRIME
NEGATIVE1. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR

USSR

NASTOYASHCHIY, A. F., SHEVCHENKO, L. P.

UDC: 621.039.616

"Thermonuclear Combustion Wave in a Contained Plasma"

Moscow, Atomnaya Energiya, Vol 32, No 6, Jun 72, pp 451-455

Abstract: A thermonuclear plasma with density close to that of a solid is considered. It is assumed that the plasma is contained by a material shell which prevents dispersion, and that energy is released within the plasma due to a synthesis reaction. At the same time, heat leakage by thermal conduction occurs as a result of contact between the plasma and the walls of the container. In addition, the heat loss causes plasma emission. It is further assumed that only a part of the plasma is heated to the thermonuclear temperature, so that there will be a boundary between the hot and cold matter at time zero. The authors analyze the conditions of existence of a thermonuclear combustion wave and propagation of this wave toward the colder region. Two methods of analysis are considered: finding approximate analytical solutions for the hot and cold regions and then joining the resultant approximations, and the phase plane method. It is shown that a combustion wave can exist in a thermonuclear plasma in such a system

1/2

USSR

NASTOYASHCHIY, A. F., SHEVCHENKO, L. P., Atomnaya Energiya, Vol 32, No 6, Jun 72, pp 451-455

only in the region of plasma temperatures and densities for which the derivative with respect to the temperature of the effective heat source is negative. The effective heat source is made up of the heat release of the synthesis reaction, heat loss to the walls of the container, and plasma emission. The negative temperature derivative criterion also defines the condition of heat equilibrium stability for a plasma with walls, as shown in a previous paper by one of the authors (see A. F. Nastoyashchiy, "Atomnaya Energiya", Vol 32, 1972, p 43).

2/2

USSR

UDC 546.185

KUKHAR', V. P., SHEVCHENKO, M. V., and PINCHUK, A. M., Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"Reaction of N,N-Dichloroamides of Arenesulfonic Acids With Trichlorophosphazo-1,1-dichloroalkanes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1649-1650

Abstract: A mixture of 0.02 g-mole of trichlorophosphazoperchloroethane, 0.02 g-mole of the dichloroamide of Benzenesulfonic acid and 5% aluminum trichloride is heated for 1-2 hrs at 80-90°, until chlorine stops evolving. The mixture is then kept for 0.5 hr at 120°, cooled to 20-25° to yield 95% of trichlorophosphazocarbacyl $Cl_3C-C(:NSO_3C_6H_5)N:PCl_3$.

1/1

USSR

VORONIN, Yu. A., MARASULOV, A. F., TITOV, A. A., SHEVCHENKO, N. G.

"Computer Programs for Determination of Optimal Subspaces in Order to Solve Recognition Problems"

Primeneniye mat. Metodov i EVM pri Poiske Polezn. Iskopaemykh [Use of Mathematical Methods and Computers in the Search for Useful Minerals -- Collection of Works], Novosibirsk, 1972, pp 150-179 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V858 by E. Vagner).

Translation: The problem of finding information sets of properties is most frequently solved as follows. First some method of evaluating the information content of individual properties is indicated, then considerations are stated allowing approximate determination of the information sets of properties as sets of independent quantities and informative properties individually. In most methods of determination of information content, the information content of a set of properties can be no less than the information content of any subset and is expressed, as a rule, by a single number. The search for the optimal set of properties is performed by random choice. It is clear that a method suitable for all cases which can avoid running through a long list cannot

VORONIN, Yu. A., MARASULOV, A. F., et. al., Primeneniye mat. Metodov i EVM pri Poiske Polezn. Iskopaemykh, Novosibirsk, 1972, pp 150-179.

be developed.

It is suggested that a set of properties be sought, the information content of which is no less than the information content of a certain fixed set of properties. Asymmetrical and symmetrical coupling factors between properties are sought, and a suggested algorithm for running through the information subspaces is described, based on determination of the close components of connection of properties. A generalized block diagram of the algorithm is presented. 37 Biblio. Refs.

2/2

USSR

UDC 8.74

VORONIN, Yu. A., MARASULOV, A. F., TITOV, A. A., SHEVCHENKO, N. G.

"Computer Software for Finding Optimum Subspaces to Solve Recognition Problems"

Novosibirsk, Primeneniye mat. metodov i EVM pri poiske polezn. iskopayemykh--sbornik (Using Mathematical Methods and Computers in Searching for Minerals--collection of works), 1972, pp 150-179 (from RZh-Matematika, No 1, Jan 73, abstract No 1V858 by E. Vagner)

Translation: The problem of finding informative aggregates of properties is usually solved in the following way: First, some method is assigned for evaluating the informability of individual properties; then considerations are pointed out which enable approximate determination of informative aggregates of properties as aggregates of independent and individually informative properties. In most methods of determining informability the informability of the aggregate of properties cannot be less than the informability of any component subaggregate and, as a rule, is expressed by a single number. The trial and error method is used in searching for the optimum aggregate of properties. Clearly there can be no procedure which avoids a very "extensive" sorting process which is suitable for all cases.

1/2

USSR

VORONIN, Yu. A., et al., Primeneniye mat. metodov i EVM pri poiske polezn. iskopayemykh--sbornik, 1972, pp 150-179

It is proposed that an aggregate of properties be sought whose informability is not less than that of some fixed aggregate of properties. Asymmetric and symmetric coefficients of coupling between properties are introduced, and the proposed algorithm for finding informative subspaces is described. This algorithm is based on determining closely related components of connectedness of properties. An over-all flow chart of the algorithm is presented. Bibliography of 37 titles.

2/2

Acc. Nr: AP0047330 **Ref. Code:** UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichniy Zhurnal, 1970,
Vol 42, Nr 1, pp 86-91

PROPERTIES OF MUSCULAR ALDOLASE OF RABBITS UNDER CONDITIONS OF FASTING

L. T. Litvinenko, M. F. Gulyi, M. I. Shevchenko, L. I. Golubeva
Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The biological properties were studied of the crystalline aldolase isolated from muscles of the rabbits fastened for a long period of time. K_m and maximum rate of the reaction as well as the effect on the enzyme activity of urea taken in low concentrations and of para-chlormercurium-benzonate (*p*-CMB) were determined. It is shown that pH-optima of aldolase from muscles of the normal and fastened animals coincide.

When incubating with fructose-1,6-diphosphate (FDP) in trisacetic buffer two pH-optima (6.3 and 9.1) were found for the both enzymes by the chemical method and one optimum (8.0) by the optical one.

When incubating with fructoso-1-diphosphate (F-1-P) the optima pH (8.5 and 5.6) were determined by the chemical method in the norm and under conditions of fasting.

1/2

REEL/FRAME
19790853

2

AP0047330

Under optimal conditions a decrease of K_m is observed for the both substrates in aldolase of the fastened rabbits. In the presence of FDP an increase in the maximal rate of the aldolase reaction was established in the fastened rabbits, with F-1-P — a decrease.

After preincubation with urea the concentration of which was 0.5—3 M the aldolase activity of the fastened rabbits lowers sharply. The activity of aldolase in norm increases until the concentration of urea taken for preincubation does not exeed 1.5 M.

Fixation of sulphydryl groups by *p*-CMB does not provoke essential differences in the activity of aldolase of the fastened animals in comparison with norm.

The established differences in the biological properties of the muscular aldolase of the rabbits fastened for a long time is result of changes in its primary structure connected with the change in biosynthesis of this enzyme.

2/2

19790854

USSR

SHCHERBAKOV, V. I., SHEVCHENKO, N. A., NORENKO, N. P., and GUMANOV, L. L., Institute of Chemical Physics, Academy of Sciences USSR

"'Superinfection Proteins' of Phage T4B of Escherichia coli and the Pleiotropic Effect of the rl Mutation"

Moscow, Doklady Akademii nauk SSSR, Vol 194, No 1, 1970, pp 208-210

Abstract: An E. coli B culture was infected with phage $T4r^+$ or T4rl and, after 11 min, reinfected with $T4r^+$. Samples taken 1 min after the first infection and every 2 min thereafter were transferred to test tubes containing 20 micro C of C^{14}-hydrolysate of Chlorella protein. After 2 min of incubation, the sample was cooled in dry ice and the suspension precipitated by centrifugation. After certain other procedures, the supernatant was subjected to disk electrophoresis in a polyacrylamide gradient. The time at which the synthesis of most proteins began and ended was the same in both the mutant and the wild phage. However, in the late stages of the latent period, the rl mutant contained radioactive proteins that were absent in cells infected with the mild phage. After infection of E. coli B under conditions preventing reinfection, or after superinfection during the late stages of the latent period, certain proteins could not be found. These proteins appeared only after repeated infection at the start of the latent period and only

1/2

USSR

SHCHERBAKOV, V. I., et al, Doklady Akademii nauk SSSR, Vol 194, No 1, 1970, pp 208-210

when the cells were initially infected with the mutant. If the cells were initially infected with the wild phage, the proteins were not revealed by gel electrophoresis, regardless of whether the culture was reinfected. The process of superinfection is considered to be connected with the regulation of protein synthesis in infected cells. The superinfection proteins are apparently directly involved in the retardation of lysis.

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF THE VITAL ACTIVITY PRODUCTS OF ACCOMPANYING BACTERIA ON THE GROWTH OF SOME CHLORELLA STRAINS -U-

AUTHOR-(03)-LENOVA, L.I., SHEVCHENKO, N.S., ZHAROVA, L.H.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOL ZH (KYYIV) 32(1): 111-115. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHLORELLA, BACTERIA, PLANT GROWTH REGULATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605001/F01 STEP NO--UR/0438/70/032/001/0111/0115

CIRC ACCESSION NO--AP0139387

UNCLASSIFIED

2/2 015

UNCLASSIFIED

CIRC ACCESSION NO--AP0139387 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF 417 STRAINS OF BACTERIA ON CHLORELLA VULGARIS WAS INVESTIGATED. MOST OF THE BACTERIA DO NOT AFFECT THE GROWTH OF ALGAE. A SMALLER AMOUNT OF THE ACCOMPANYING BACTERIA (24-27-40PERCENT) EXCRETE STIMULATING SUBSTANCES. A NEGLIGIBLE AMOUNT OF THE ACCOMPANYING BACTERIA (0-3-9PERCENT) EXCRETE SUBSTANCES INHIBITING THE GROWTH OF THE ALGAE. FACILITY: INST. MICROBIOL. VIROL., ACAD. SCI. UKR. SSR, KIEV, USSR.

UNCLASSIFIED

USSR UDC 577.17:576.8+582.26

LENOVA, L. Y., SHEVCHENKO, N. S., and ZHAROVA, L. H., Institute of Microbiology and ~~Virology~~, Academy of Sciences, Ukrainian SSR

"Effect of the Products of Life Processes of Accompanying Bacteria on the Growth of Some Chlorella Strains"

Kiev, Mikrobiolochichnyy Zhurnal, Vol 32, No 1, Jan/Feb 70, pp 111-115

Abstract: The effect of 417 associated strains of bacteria on Chlorella vulgaris strains 62, 9 and PPG was investigated. Most of the associated bacteria had no effect on algae growth. Some strains had a stimulating effect 24%, 27% and 40% with respect to strains 62, 9 and PPG and some an inhibiting effect none, 3% and 9% respectively. The most active stimulators of algae are: Bacterium candicans, Bact. nitrificans, Bact. centro-sporus, Micrococcus luteus, Pseudomonas Liquefaciens, Ps. sinuosa, Ps. virescens, Sarcina subflava, Sarcina lutea, Bacillus natans, and Chromobacterium aurantiacum. Bacterium candicans and Bact. nutrificans were also the strongest bacterial antagonists. It was noted that some bacteria are capable of undergoing laboratory mutation, so that some stimulators lose their property, and the antagonists may even begin to stimulate growth.

1/1

USSR

UDC 620.193.27

SHEVCHENKO, O. F., Central Scientific Research Institute of Shipbuilding Technology

"Effect of the Removal of Corrosion Products and Growths on the Corrosion of Metals in Sea Water"

Moscow, Zashchita Metallov, Vol 7, No 4, Jul-Aug 71, pp 434-436

Abstract: The corrosion resistance of a large series of specimens of shipbuilding steel 3S, stainless steel 0Kh17N7Yu, aluminum alloy AMg-61, and brass L-62 was investigated. The specimens were submerged in sea water, after removal of corrosion products, growths, and foulings, for a period of one year and checked in 1, 2, and 3 monthly intervals. Tabulated investigation results are discussed and show that the removal of corrosion products affects mostly the corrosion rate of the aluminum alloy AMg-61. This is explained by the protective effect during the first test months of the oxygen layer developed after rolling. The corrosion of stainless steel specimens on which the growths were removed during the investigation period showed a corrosion decrease by tens of times. Two tables, four biblio. refs.

1/1

Corrosion

USSR

UDC 620.193.27

LAGUTINA, A. G., and SHEVCHENKO, O. F., Central Scientific Research Institute of the Shipbuilding Industry

"Influence of Seasonal Factors on the Corrosion of Metal in the Sea"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 197-199.

Abstract: Results are presented from studies of the corrosion of type 3S steel and AMg-61 aluminum alloy in the Black Sea as a function of seasonal factors. The maximum corrosion rate is observed during the season of highest water temperature (August) for steel, while the aluminum is corroded most rapidly in the spring, during the time of rapid development of algae and plankton.

1/1

5

USSR

LAGUTINA, A. G., DANIL'CHENKO, K. P., SHEVCHENKO, O. F., and BARANNIK, V. P.

"Corrosion Study of Shipbuilding Materials in Sea Water"

Moscow, Zashchita Metallov, Vol 6, No 1, Jan-Feb 70, pp 48-51

Abstract: Comparative data on the corrosion resistance of metallic materials most commonly used in shipbuilding (ZS steel, AMT$_g$-9-2, NMZhTs-28-2.5-1.6 monel metal, AM$_g$-61, 1Kh18N10T, OKh17N7Yu stainless, L-62 brass) in natural (sea water) and laboratory (synthetic and natural sea water) conditions are given. The following was established: a) the corrosion rate of some shipbuilding materials tested in sea water at complete immersion is much higher than the corrosion rate of the same metals tested under laboratory conditions both in synthetic and sea water. After one year of testing, the corrosion rate of brass and AMg-61 alloy at sea is 5 to 6 times higher than in nonrunning water under laboratory conditions; b) tests of stainless and monel metal revealed not only a difference in corrosion rate but also in its nature. 1Kh18N10T and OKh17N7Yu stainless as well as monel metal did not corrode in natural sea water in the laboratory but underwent strong pitting corrosion at sea; c) the basic factors accelerating the corrosion of shipbuilding materials under natural sea water conditions are biological, which are conducive to changes in the physico-chemical properties of sea water, as well as mechanical (natural mixing of sea water accelerating the cathodic reaction of the corrosion process).

1/1

Acc. Nr:
AP0049341

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:
UR0365

5

103580e Corrosion of ship structural materials in sea water. Lagutina, A. G.; Danil'chenko, K. P.; Shevchenko, O. E.; Barannik, V. P. (USSR). *Zashch. Metal.* 1970, 6(1), 48-51 (Russ). Sea exposures were operated at a 40 m depth with daily elevation by 1.5 to 4 m/day; the samples became badly covered with seaweed and various marine deposits, and with Fe the corrosion layer assumed a yellow color. Synthetic sea waters were less corrosive. Under lab. conditions, natural sea water (pH 8.7) was most corrosive with rapid circulation and aeration, but in any case more corrosive than synthetic sea water. Results in flowing sea water were: St 3C 0.053; AlMg-61 0.012; Monel NiMoFeMn-28-2.5-1.6 0.009; brass L-62 0.007; Br AlMn-9-2 0.006; 1Cr18Ni10Ti 0.0; and 0 Cr17Ni7Al 0.0 g/m^2/day corrosion loss. Some variation was noted in the Black Sea tests, presumably from greater biol. action.

H. Marshall

yk

1/1

REEL/FRAME
19801158

18

/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70
TLE--PHOTOPROTON CROSS SECTIONS FOR NUCLEI WITH (1F-2P) SHELL -U-

THOR-(05)-ISHKHANOV, B.S., KAPITONOV, I.M., PISKAREV, I.M., SHEVCHENKO,
V.G., SHEVCHENKO, O.P.
UNTRY ~~OF INFO--USSR~~

S

URCE--YAD. FIZ. 1970, 11(3), 485-91

TE PUBLISHED--------70

BJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

PIC TAGS--PHOTONUCLEAR REACTION, PROTON SPECTRUM, EXCITATION CROSS
SECTION, INTEGRAL CROSS SECTION, NICKEL ISOTOPE, CHROMIUM ISOTOPE

NTROL MARKING--NO RESTRICTIONS

CUMENT CLASS--UNCLASSIFIED
OXY REEL/FRAME--1991/1053 STEP NO--UR/0367/70/011/003/0485/0491

RC ACCESSION NO--AP0110743
UNCLASSIFIED

/2 .015 . UNCLASSIFIED PROCESSING DATE--16OCT70
RC ACCESSION NO--AP0110743
STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTO-P CROSS SECTIONS WERE MEASURED FOR PRIME52 CR, PRIME58 NI, AND PRIME60 NI FROM THRESHOLD TO 30 MEV. THE P WITH ENERGIES GREATER THAN 1 MEV WERE REGISTERED. A NO. OF MAX. WERE FOUND. THE INTEGRAL CROSS SECTIONS FOR PRIME52 CR, PRIME58 NI, AND PRIME60 NI WERE 240,570, AND 320 MEV-MB, RESP. THE ANOMALOUSLY HIGH VALUE OF THE PHOTO-P PRODUCTION CROSS SECTION FOR PRIME58 NI, AS WELL AS THE SHIFT OF THE CENTERS OF GRAVITY FOR THE PHOTO-P CROSS SECTIONS TOWARD HIGHER EXCITATION ENERGIES, AS COMPARED TO THE PHOTO-N CROSS SECTION WHICH WAS OBSERVED FOR PRIME51 CR AND PRIME60 NI, CAN BE EXPLAINED BY THE INFLUENCE OF THE ANALOG STATES. FACILITY: INST. YAD. FIZ., MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INTERMEDIATE STRUCTURE OF CROSS SECTIONS OF PHOTONEUTRON REACTIONS ON MOLYBDENUM ISOTOPES -U-

AUTHOR-(05)-ISHKHANOV, B.S., KAPITONOV, I.M., LAZUTIN, YE.V., PISKAREV, I.M., SHEVCHENKO, O.P.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(3), 702-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--PHOTONEUTRON, BETATRON, RESONANCE ABSORPTION, MOLYBDENUM ISOTOPE, INTEGRAL CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1079 STEP NO--UR/0367/70/011/003/0702/0704

CIRC ACCESSION NO--AP0110769

UNCLASSIFIED

CIRC ACCESSION NO--AP0110769

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOTO-N REACTIONS ON PRIME92 MO AND PRIME98 MO ARE INVESTIGATED BY USING A 35-MEV BETATRON. CROSS SECTIONS OF THE REACTION (GAMMA, TN) EQUALS CROSS SECTIONS OF (GAMMA, N), PLUS 2 (CROSS SECTION OF (GAMMA, 2N)) PLUS CROSS SECTION OF (GAMMA, NP); THERE ARE SIMILAR TO 15 RESONANCES FOR EACH CROSS SECTION. THE WIDTHS OF THE GIANT RESONANCES IN THE REACTION (GAMMA, TN) ON THE PRIME92 MO AND PRIME98 MO NUCLEI ARE 5 AND 7 MEV, RESP. FOR THE REACTIONS (GAMMA, N) PLUS (GAMMA, NP), THE VALUES OF THE INTEGRAL CROSS SECTIONS FOR PRIME92 MO AND PRIME98 MO ARE 1.12 PLUS OR MINUS 0.11 AND 1.10 PLUS OR MINUS 0.11 MEV-B, RESP. EXPTL. RESULTS ARE COMPARED TO THEORETICAL VALUES. THE EXPTL. VALUES SHOW A GREATER NO. OF RESONANCES. THE GREATEST DISCREPANCY BETWEEN THEORY AND EXPT. IS FOUND AT 24-30 MEV. FACILITY: INST. YAD. FIZ., MOSK. GOS. UNIV., MOSCOW, USSR.

USSR

UDC 627.81.034(47+57)

NISHCHIMENKO, A. YA., MONZHOSOV, A. I., SHEVCHENKO, P. K.

"Reformation of the Banks of the Dnepr Reservoirs"

Tr. koorkinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Meetings on Hydroengineering), No 59, 1970, pp 50-59 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D39)

Translation: Generalization of many years of stationary studies by the hydrogeological expedition of the Ministry of Water Conservancy of the Ukrainian SSR in the shore zone of the Dnepr Reservoir permitted classification of reservoir banks considering the genesis and dynamics of the reworking processes. The characteristic and spread of types of banks are presented for the three largest reservoirs: Kiev, Kremenchug and Kakhovka. There are 3 illustrations and a 2-entry bibliography.

1/1

Acc. Nr.: AP0031626 S Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol 69, Nr 1, pp 75-76

THE AMOUNT OF COPPER AND MANGANESE CONTAINED IN EXPERIMENTAL NEWGROWTHS OF ANIMALS AND IN OSSEOUS SARCOMAS OF MAN

S. D. Shevchenko, Yp Ya. Pankov
Kharkov Research Institute of Prosthesis, Orthopedics and Traumatology

Copper and manganese content in diverse osseous newgrowths in man and animals (rabbits, rats), and also correlation of these elements were investigated. When calculated at zonal rate the amount of copper and manganese in tumours turned out to be higher by comparison with their level in intact bones. Correlation of these elements (Cu/Mn) in tumours rise sharply. The nature of proportional distribution of copper and manganese in tumours of different origin under examination disaccorded but little.

mk

1/1 2

REEL/FRAME

19691753

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--HYDROPHILIZATION OF MEDICINAL POWDERS IN TABLET MANUFACTURE -U-

AUTHOR-(02)-BORZUNOV, YE.YE., SHEVCHENKO, S.M.

COUNTRY OF INFO--USSR

SOURCE--FARM. ZH. (KIEV) 1970, 25(1), 60-2

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--DRUG ANALYSIS, SURFACTANT, TITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0666 STEP NO--UR/0491/70/025/001/0060/0062

CIRC ACCESSION NO--AP0131271

UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AP0131271 UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- PROCESSING DATE--04DEC70

ABSTRACT. A TITRN. PROCEDURE, DEVELOPED BY RITCHELL AND RAHMAN (1964), WAS EMPLOYED FOR THE DETN. OF THE MIN. AMT. OF TWEEN 80 AND POLY)OXYSTEARATE) 40 REQUIRED FOR COMPLETE HYDROPHILIZATION OF A POWDER. POWDERS CONTG. 15 DRUGS WERE EXAMD. AND THE RESULTS WERE TABULATED. THE MIN. AMT. OF TWEEN 80 RANGED FROM 0.07 TO 3.85PERCENT FOR POWDERS CONTG. PHTHIVAZID AND PHENOBARBITAL, RESP. FOR POLY)OXYSTEARATE) 40 THE EXTREME FIGURES WERE 0.07 (PHTHIVAZID) AND 1.5 (SULFADIMEZINE). THE DIFFERENCES ARE INTERPRETED IN TERMS OF VARIOUS HLB (HYDROPHILIC LIPOPHILIC BALANCE) VALUES OF THE SURFACE ACTIVE AGENTS, DIFFERENT HYDROPHOBICITY OF POWDERS, AND DIFFERENT GRAIN SIZE OF POWDER PARTICLES. FACILITY: KHARKOV SCI. RES. CHEM. PHARM. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 546.882+620.172.24

AMONENKO, V. M., AZHAZHA, V. M., ZEYDLITS, M. P., and SHEVCHENKO, S. V., Physical-Mechanical Institute, Academy of Sciences Ukrainian SSR

"Effect of Small Additions of Oxygen and Nitrogen on the Nature of the Mechanical Properties-Temperature Relationship in Niobium"

Kiev, Problemy Prochnosti, No 6, 1973, pp 54-56

Abstract: The effect of oxygen and nitrogen impurities on the nature of the temperature and strength-ductility properties of niobium was studied. Niobium of 99.8% purity was used which contained metallic impurities of 0.09% Ta and $5 \cdot 10^{-3}$% W and Fe, and interstitial impurities of $2 \cdot 10^{-3}$% H_2, $5 \cdot 10^{-3}$% O_2 and $2.6 \cdot 10^{-3}$% N_2. The mechanical properties of niobium were studied in the 20-900 C interval where it was shown that at a strain rate of $1.6 \cdot 10^{-3}$ sec, at 300, 400 and 550 C, maximum strength properties and minimum ductility are observed. Height of the maximums at 300 and 550 C depends on the concentration of oxygen and nitrogen. The smooth change in the mechanical properties of niobium with temperature is associated with the deformation dynamics of aging. 3 figures, 1 table, 9 bibliographic references.

1/1

Instruments and Measurements

USSR

UDC: 537.312.62

KOLODEYEV, I. D., SHEVCHENKO, T. G.

"A Method of Making Electromagnetic Systems of Superconductive Regulated and Controlled Suspensions for Cryogenic Electrical Equipment"

USSR Author's Certificate No 265279, filed 27 Oct 67, published 23 Jun 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D515 P)

Translation: This Author's Certificate introduces a method of making the electromagnetic systems of superconductive regulatable and controllable suspensions for cryogenic electrical instruments by winding wire on a form with subsequent connection of the ends of the winding in a predetermined circuit. As a distinguishing feature of the patent, the method provides for regulation of undamped current, and for rigidity of the suspension and the position of the movable elements. The coils of the electromagnetic system for each support are wound on the same form with two or more superconductors simultaneously and the initial ends of the windings on one support are then connected by some such method as welding using superconducting contacts to the windings of the other support. The windings are connected in two series circuits which are connected in turn by the same kinds of contacts to each other in parallel, and also in parallel with the shunt of a superconducting switch, forming a closed superconductive circuit with several inputs.

1/1

USSR

UDC 535.581.3

KOLODEYEV, I. D., KALININ, V. YA., SUDOVTSOV, A. I., SHEVCHENKO, T. G.

"Setup for Studying Cryogenic Electromechanical Instruments and Devices"

Moscow, Pribory i Tekhnika Eksperimenta, No 5, 1972, pp 247-248

Abstract: An experimental device with a metal laboratory cryostat designed for studying superconducting electromechanical devices in liquid helium is described. The arrangement differs from those already known in the apparatus for operation of the investigated instruments and the cryostat in the neck of which there is a container with liquid N_2 acting as a heat shield over a helium bath. The application of this shield has permitted a significant reduction in the heat flux to the coolant and a 3 to fourfold increase in the possible time of the experiment without increasing the liquid helium flow rate. Prolonged operation of the device demonstrated that the germanium photodiodes and optical fiberglass light guides remain reliable for multiple repetitions of the filling of the cryostat with liquid helium and evaporation of it after completion of the experiment. The liquid helium level is signalled electronically by a light indicator. An audio signal is also used for the emergency level. The cryostat characteristics are as follows: helium tank volume 7 liters, volume of helium

1/2

USSR

KOLODEYEV, I. D., et al., Pribory i Tekhnika Eksperimenta, No 5, 1972, pp 247-248

admitted to the cryostat 4.5 liters, inside diameter of the helium tank 130 mm, the reservoir for liquid N_2 holds 1.5 liters, and the evaporation of the He in the static mode is 0.45-0.5 liters/hour. A complete section view of the device is included.

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PURIFIED WASTE WATER IN SULFATE PULP PRODUCTION -U-

AUTHOR-(03)-MOREKHIN, M.G., MILOVZOROV, V.P., SHEVCHENKO, T.V.

COUNTRY OF INFO--USSR

SOURCE--BUM. PROM. 1970, (5), 14-15

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PAPER INDUSTRY, INDUSTRIAL WASTE, WATER POLLUTION, CHEMICAL PATENT, WATER RECYCLING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0992

STEP NO--UR/0239/70/000/005/0014/0015

CIRC ACCESSION NO--AP0134705

UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0134705 UNCLASSIFIED PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF PURIFICATION OF
KRAFT MILL EFFLUENTS DESCRIBED IN U.S.S.R. 245,672, WHICH REMOVES
95-100PERCENT ORG. IMPURITIES AND MAKES POSSIBLE THE RECYCLING OF THE
PURIFIED WATER, WAS TESTED IN A TM 68 MACHINE OF CAPACITY 10 M
PRIME3-DAY TO DET. THE EFFECT OF THE SALT COMPN. OF THE WATER ON ITS
QUALITY FOR USE IN KRAFT PULP MANUF., AND THE LENGTH OF TIME THIS WATER
COULD BE USED IN A CLOSED CYCLE BEFORE BEING DEASHED. A PART OF THE
SALTS INTRODUCED INTO THE PROCESS WATER DURING PULPING IS REMOVED IN THE
PURIFICATION PROCESS, BUT NEW MINERAL IMPURITIES ARE INTRODUCED DURING
PURIFICATION, SO THAT THE MINERAL COMPN. IS ALTERED. ACCORDING TO THE
PROPOSED METHOD, DEASHING IS TO BE DONE BY DISTN. AFTER 50 CYCLES, I.E.
THE CYCLE IS CLOSED BY DISTG. 2PERCENT OF THE INITIAL PROCESS WATER.
THE MODEL EXPTS. WERE CONDUCTED FOR 1000 HR, USING EFFLUENTS FROM THE
KHERSON PULP MILL, AND THE PURIFIED WATER WAS REUSED 25 AND 50 TIMES IN
THE MANUF. OF KRAFT PULP FROM ASPENWOOD AND SPRUCEWOOD. THE PULPS
OBTAINED DID NOT DIFFER FROM THOSE MANUFD. WITH FRESH WATER. MULTIPLE
RECYCLING INCREASED BY 15-17PERCENT THE AMT. OF CHEMS. USED FOR PREPN.
OF WHITE LIQUOR AND AN INCREASED FOAMING TENDENCY WAS OBSERVED. THE
PURIFIED WATER WAS USED IN ALL STAGES OF THE PULP MANUFG. PROCESS
(PREPN. OF WHITE LIQUOR, PULP WASHING, BEATING, AND PREPN. OF
HANDSHEETS) AND THERE WERE NO EFFLUENTS TO BE DISCHARGED. INDUSTRIAL
TESTS ARE NCESSARY TO DET. THE ECONOMIC ASPECTS OF THE NEW PURIFICATION
PROCESS.

FACILITY: KIEV. TORG.-EKON. INST., KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 801.51

MURASHKO, V. A., KRIVITSKIY, V. A., SHEVCHENKO, T. Ye.

"An Information Language for Finding Documents on Automation of Metallurgical Production"

V sb. Prom. kibernetika. Vyp. 3 (Industrial Cybernetics--collection of works. No 3), Kiev, "Nauk. dumka", 1971, pp 21-33 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V653)

[No abstract]

6610
CSO: 1843-W

- END -

1/1

USSR

ALEKSAKHIN, R., and SHEVCHENKO, V.

"Report on Symposium entitled 'Evaluating the Genetic Effects of Small Doses of Ionizing Radiation'"

Moscow, Genetika, Vol 7, No 5, 1971, pp 174-176

Abstract: In view of the practical and theoretical importance of the genetic aspect of the effect of small doses of ionizing radiation, the Scientific Council on Radiobiological Problems of the USSR Academy of Sciences and the Institute of General Genetics, USSR Academy of Sciences held a symposium from 9 to 15 March 1970, in Mozzhinka (near Moscow), dealing with the advances made and future prospects of scientific research on this subject. Forty papers were delivered at this symposium, and representatives participated from 29 organizations of the USSR Academy of Science, academies of sciences of some Union republics, from the USSR Ministry of Health, RSFSR Ministry of Health, VASKhNIL (All-Union Academy of Agricultural Sciences imeni V. I. Lenin), and some others.

Academician V. M. Klechkovskiy, of VASKhNIL, Vice-Chairman of the Scientific Council on Radiobiological Problems, delivered the opening remarks.

USSR

ALEKSAKHIN, R., and SHEVCHENKO, V., Genetika, Vol 7, No 5, 1971, pp 174-176

Ya. L. Glembotskiy (Institute of General Genetics, USSR Academy of Sciences, Moscow), in an introductory report mentioned the considerable difficulties involved in investigating the genetic effect of small doses of radiation, first of all in experimental studies. He also stated this important problem has not been investigated enough.

The effect of x-rays on the chromosome system of human peripheral blood, during diagnostic examination of the stomach was the subject of the paper of A. I. Kuznetsov (Institute of Radiation Hygiene, RSFSR Ministry of Health, Leningrad). P. A. Borodkin (Institute of Biology, Komi Branch of the USSR, Academy of Sciences Syktyvkar) discussed the lasting changes in blood cell chromosomes observed upon karyological examination of individuals exposed to occupational irradiation. V. I. Teterin (Tomsk Medical Institute) reported the changes in mitotic activity of bone marrow cells as the result of chronic irradiation of cultures in a dose of 6-12 r/day.

The paper of Ya. I. Moskalev and I. K. Petrovich (Institute of Biophysics, USSR Ministry of Health, Moscow) reported data on the somatic effect of small doses of ionizing radiation on female Wistar rats following single exposure to doses of one to 400 r.

2/8

USSR

ALEKSAKHIN, R. and SHEVCHENKO, V., Genetika, Vol 7, No 5, 1971, pp 174-176

T. P. Tsessarskaya and T. M. Zukhbaya (Institute of Biomedical Problems, USSR Ministry of Health, Moscow) reported the results of cytogenetic studies of dogs exposed to chronic gamma irradiation (25-150 r in one year). Yu. K. Kudritskiy and R. I. Bikkulov (Institute of Radiation Hygiene, RSFSR Ministry of Health, Leningrad) called attention to the important role of the age of experimental animals and dosage in cytogenetic and somatic lesions due to chronic irradiation of mice.

Ya. L. Glembotskiy (Institute of General Genetics, USSR Academy of Sciences, Moscow) discussed the results of experiments involving chronic irradiation of male gametes of Drosophila melanogaster at different stages of spermatogenesis.

The paper of G. P. Pargenov (Institute of Biomedical Problems, USSR Ministry of Health, Moscow) dealt with analysis of the combined effect of ionizing radiation and spaceflight factors. He observed that today we can refer to the practical importance of the potential genetic effect of small doses of irradiation.

The team headed by M. D. Pomerantseva (Institute of General Genetics, USSR Academy of Sciences, Moscow) submitted papers on the results of experimental research on the effect of x-ray irradiation and fast neutrons on

3/8

USSR

ALEKSAKHIN, R., and SHEVCHENKO, V., Genetika, Vol 7, No 5, 1971, pp 174-176

the cells of male mice (M. G. Domshlak, L. K. Ramayya, and M. D. Pomerantseva), on comparative evaluation of genetic radiosensitivity of sex xells of male mice exposed to x-rays at the embryonic age of 16 days and in the first 24 hours after birth (U. T. Fazylov), and a survey of the results of recent studies of the mutagenic effect of small doses of radiation on mammals (M.D. Pomerantseva).

A. N. Sirotkin and V. T. Kruglov (All-Union Institute of Experimental Veterinary Science, USSR Ministry of Agriculture, Moscow) discussed the effect of external irradiation and incorporated Sr^{90} + uY^{90} radionuclides on the peripheral blood of cattle (cows).

Papers from the Institute of Biophysics, USSR Academy of Sciences (Moscow) discussed comparative radiosensitivity of various somatic and genetic cells of different lines of mice (O. P. Domareva and T. I. Dmitriyeva), results of experiments on the correlation between the genetic effect and dose fractionation (N. I. Nuzhdin, G. A. Chudinovskaya, and O. N. Kitayeva), and some aspects of the protective effect of β-mercaptoethylamine on the genetic level (I. S. Kurnishkov).

Papers on the effect of ionizing radiations on fish embryos prompted lively discussion. I. A. Shekahnova (All-Union Scientific Research Institute

4/8

USSR

ALEKSAKHIN, R., and SHEVCHENKO, V., Genetika, Vol 7, No 5, 1971, pp 174-176

of Marine Fishing and Oceanography, Moscow) and G. G. Polikarpov (Institute
of Biology of the Southern Seas, Ukrainian Academy of Sciences, Sevastopol')
reported on the results of investigation of the genetic effect of Sr^{90} on
the embryonic stage of fish development and the methodological aspects of
studying the effect of low doses of radiations on fish. The results of
experimental studies on these subjects were also submitted in the papers of
G. G. Polikarpov, V. G. Tsytsugina, D. S. Parchevskaya (Institute of Biology
of the Southern Seas, Ukrainian Academy of Sciences, Sevastopol'), I. A.
Shekhanova, L. B. Klyashtorin, V. L. Pechkurenkov, I. G. Telycheva (All-
Union Scientific Research Institute of Marine Fishing and Oceanography, Mos-
cow), and G. L. Pokrovskaya (Institute of General Genetics, USSR Academy of
Sciences, Moscow).

At the symposium, much attention was devoted to analysis of genetic
and somatic effects of small doses of ionizing radiation on agricultural
plants. M. A. Pitirimova and N. F. Batygin (Institute of Agricultural
Physics, VASKhNIL, Leningrad) reported on the effect of gamma radiation on
different stages of barley plant ontogeny. A. A. Kaplan and I. S. Kaplan
(Moscow State University) and V. V. Khvostova (Institute of Cytology and
Genetics, Siberian Department of the USSR Academy of Sciences, Novosibirsk)

5/8

USSR

ALEKSAKHIN, R., and SHEVCHENKO, V., Genetika, Vol 7, No 5, 1971, pp 174-176

talked about the genetic effect of internal and external chronic irradiation. N. D. Zuyeva discussed the effect of $Sr^{90} + Y^{90}$ on potato development and harvest.

N. P. Rogatykh (Institute of General Genetics, USSR Academy of Sciences, Moscow) analyzed some of the patterns of radiostimulation. S. P. Yarmonenko (Institute of Experimental and Clinical Oncology, USSR Academy of Medical Sciences, Moscow) talked about the stimulating effect of irradiation on Hela cell cultures, as manifested by acceleration of the cell division cycle. The report of F. V. Sushkov (Institute of Biomedical Problems, USSR Ministry of Health, Moscow) also discussed radiostimulation of cell division in tissue cultures under the effect of chronic gamma irradiation.

T. N. Ratner (Institute of Cytology and Genetics, Siberian Department of the USSR Academy of Sciences, Novosibirsk) and Yu. I. Gregadse (All-Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements, Moscow Oblast) discussed the difficulties encountered in assaying absorbed doses in experiments using small doses.

There was extensive discussion of issues dealing with investigation of genetic sequelae of chronic irradiation of natural populations and bio-

6/8

USSR

ALEKSAKHIN, R., and SHEVCHENKO, V., Genetika, Vol 7, No 5, 1971, pp 174-176

cenoses. Papers delivered by the Institute of General Genetics USSR Academy of Sciences (Moscow) described an increase in radioresistance of natural populations of different species exposed for a long time to high concentrations of $Sr^{90} + Y^{90}$ radionuclides, and in particular in populations of Chlorella (V. A. Shevchenko, A. YA. Alekseyenok, and D. R. Pyatyshev), and wild herbaceous plants (L. V. Cherezhanova, R. M. Aleksakhin, and YE. G. Smirnov). Ye. M. Tishchenko reported finding increased radioresistance in the bone marrow cells of northern red backed voles which had lived for a long time in regions with a high concentration of $Sr^{90} + Y^{90}$, as compared to control animals. Experimental data on the deleterious effect of Sr^{89} β-irradiation on timber (pine) in the case of radioactive fallout on the tree tops were submitted in the paper of L. V. Cherezhanova (Institute of General Genetics, USSR Academy of Sciences, Moscow), V. P. Yulanov, F. A. Tikhomirov (Moscow State University), and R. T. Karabanya (Institute of Applied Geophysics, Main Administration of the Hydrometeorological Service, Moscow).

S. A. Famelis (Institute of Plant and Animal Ecology, Ural Department of the USSR Academy of Sciences, Sverdlovsk) reported on the effect of low doses of gamma irradiation (ranging from 15 to 30 r) on Limnea stagnalis embryos at three stages of embryonic development.

7/8

USSR

ALEKSAKHIN, R., and SHEVCHENKO, V., Genetika, Vol 7, No 5, 1971, pp 174-176

At the closing meeting, the symposium participants approved its decisions unanimously. Remarking on the exceptional importance and timeliness of the symposium, it was stressed that there is a need for broader and deeper research to define existing ideas about quantitative assays of the genetic danger to mankind of low doses of ionizing radiation.

The participants commented on the obvious inadequacy of research on radiation genetics of mammals pursued at the present time in the Soviet Union and they observed that for progress in this extremely important area of biological research it is imperative to expand and deepen research as soon as possible. More work on investigation of the genetic and somatic sequelae of irradiation and on definition of the radiation doses permissible for man is needed. Much attention should also be devoted to development of studies of the genetic sequelae of radioactive contamination of the biosphere, especially water.

The symposium participants approved several concrete proposals for implementation of the decisions made. The next meeting on evaluation of the genetic effect of small doses of ionizing radiation was to convene in March 1971.

8/8

1/2 030

TITLE--LUNAR RESEARCH -U- UNCLASSIFIED PROCESSING DATE--04DEC70

AUTHOR--SHEVCHENKO, V.

COUNTRY OF INFO--UNITED STATES, USSR

SOURCE--KAZAKHSTANSKAYA PRAVDA, AUGUST 19, 1970, P 4, COLS 1-3

DATE PUBLISHED--19AUG70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, SPACE TECHNOLOGY

TOPIC TAGS--LUNAR PROBE, LUNAR LANDING, LUNAR SATELLITE, MOON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1103 STEP NO--UR/9004/70/000/000/0004/0004

CIRC ACCESSION NO--AN0138120

UNCLASSIFIED